The Pan-Pacific Entomologist

Vol XVII No. 2 April, 1941

NOTES AND DESCRIPTIONS OF NEOTROPICAL TRIATOMINÆ

(Hemiptera, Reduviidæ)

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Since the appearance of a preliminary paper (Usinger, 1939) on blood sucking bugs of the subfamily Triatominæ, many additional notes and specimens have come to hand. Most of this material has been received through the generous cooperation of Messrs. H. G. Barber, E. Brumpt, S. C. Bruner, Luis Mazzotti, and S. F. Wood. To all of these, I wish to express my appreciation and thanks.

BOLBODERA SCABROSA Valdés

Bolbadea leabrusa Valdés Ragués, Anal. Acad. Cien. Med., Fís. Nat. Habana, 46:435, 1910. *Error of transcription.*

Bolbodera scabrosa Valdés Ragués, Cat. Mus. Cub. "Gundlach," p. 101, 1914.

Bolbodera scabrosa Uhler, MS., Bruner and Fracker, Ann. Ent. Soc. Am., 19:247-249, fig. 1, 1926.

Callotriatoma cubana Usinger, Univ. Calif. Publ. Ent., 7:33-56, 1 plate, 1939.

Mr. H. G. Barber has kindly called my attention to the description of *Bolbodera scabrosa.* This name was unfortunately omitted from the list of Neiva and Lent (1936) and all other accounts of this subfamily and was listed in the Zoological Record without comment as to its systematic position. Although I have not compared the type of *Bolbodera scabrosa* with *Callotriatoma cubana,* it seems certain that the two are identical. Hence the name *Bolbodera* should be substituted in my key to genera (1939).

The situation is even more complicated as indicated by Mr. S. C. Bruner who writes, "The description and figures were made from an old faded specimen (evidently a female) in a sealed glass-topped box in the Gundlach collection, Havana . . . I have learned since our article appeared that one Dr. Pedro Valdés

Ragués in the year 1910 published a paper entitled 'Clasificación Gundlach de Hemípteros Cubanos, Conforme a los Ejemplares que existen en el Museo del Instituto de 2ª Enseñanza de la Habana' (pp. 425 to 446, Anales, Academia Ciencias Med., Físicas y Naturales de la Habana, Tomo XLVI, Febrero, 1910). It is one of the most remarkable contributions I know of; scarcely a name is written as originally intended. Nevertheless, this so-called 'Gundlach Classification' exists, although Gundlach really wrote the labels correctly in German style script, following determinations made by Uhler in most cases . . . In describing *Bolbodera scabrosa* we unfortunately adopted Uhler's manuscript name. Now this appears in the Valdés paper (page 435) as follows (exact): '*Bolbadea leabrusa* 8 mm. algo ancho rojizo . . . 385.' The number is printed, so this is right." Metcalf (1936) treats the names of Valdés in the Fulgoroidea as *nomina nuda* but Bruner and Barber (1937) follow a strict interpretation of the rules for it is perfectly obvious that the remarks of Valdés, however brief, still constitute a description. The present case is further complicated because of the "error of transcription" of Gundlach's German script. However, we know the correct orthography of Uhler's manuscript name from several sources and Valdés himself spells the name correctly in a subsequent publication (1914) as indicated in synonymy above. I am further indebted to Mr. Bruner for copying portions of this 1914 paper for me.

Dimidiata Group

For many years the status of *Conorhinus maculipennis* Stål (1859) has remained in doubt because of Champion's misidentification of *dimidiata* (1899). Basing his conclusions entirely upon the extent of the corial markings, Champion considered Mexican specimens with only a small discal spot on the corium as typical *dimidiata*. Specimens from the same locality (Temax, Yucatan) with more extensive corial markings were designated as variety *a* with *maculipennis* as a synonym, while a single female from the same locality with the corium dark except on the "outer margin at the base and a space along the middle of the apical margin" was called variety *b*. Actually this variation approaches a continuum in the fine series before me collected, for the most part, by Dr. Luis Mazzotti. Moreover, this

entire series of Mexican specimens is smaller in size, 24½ to 28½ mm., than "typical" *dimidiata* from farther south. *Dimidiata* Latreille (1827) was described from Peru and specimens before me from Costa Rica and Panama agree with Latreille's description and figure. The length varies from 29 to 33 mm. and the head is often proportionately longer than in *maculipennis*. Stål called attention to these differences in 1859 and the extensive material which has come to light since that time indicates clearly that we are dealing at least with a geographically distinct subspecies.

Two other species of the *dimidiata* group have recently been discovered, both with ranges of distribution continuous with the widespread Central American and northern South American *dimidiata*. One of these, *hegneri*, was recently described by Mazzotti (1940) while the other is described below. The following key will aid in identifying members of the *dimidiata* group.

Key to the Species of the Dimidiata Group

1. Corium and connexivum in great part black, the corium infuscated basally as well as at middle and at apex and the connexivum pale only narrowly laterally in the region of posterior angles. Clavus at least obscurely infuscated even on apical half. Mexico.....*hegneri* Mazzotti
–. Corium and connexivum at least one-half yellow or orange-yellow, the base of the corium and apical half of the clavus always pale and immaculate. Connexivum yellow with more or less extensive black spots on antero-lateral portion of each segment.....2
2. Head over twice as long[1] as wide across the eyes, 113::50; the eyes small, one-half to two-thirds as wide as interocular space; humeri distinctly angulately produced, subrounded at apices. Length 31 to 33 mm. Colombia.....*capitata* n. sp.
–. Head length subequal to, or shorter than, twice the width across eyes; eyes wider, four-fifths the width of interocular space or nearly equal to width of interocular space; humeri scarcely produced, distinctly rounded. Length 24½ to 33 mm.....3
3. Head subequal in length to twice the width across eyes. Length 29 to 33 mm. Costa Rica, Panama, and southward.....*dimidiata* (Latr.)
–. Head usually shorter than twice the width across eyes. Size smaller, 24½ to 28 mm. Mexico.....*maculipennis* (Stål)

[1] The length of the head is measured from extreme apex to, *but not including*, constricted neck region.

Triatoma capitata Usinger, new species

A large, relatively pale form with longer, more slender head, smaller eyes, and sharper humeral angles.

Head over twice as long (excluding constricted neck region) as broad across the eyes, 113::50; tylus narrowed anteriorly, broad and bulbous on basal half, with a broad depression at extreme base; juga scarcely attaining level of apices of antenniferous tubercles; lora not quite reaching apex of tylus; upper surface transversely rugose along the middle and punctate throughout, moderately elevated posteriorly; eyes one-third longer than postocular length of head to posterior constriction, 24::19, about half as wide as interocular space, 12::25; ocellar yoke located at extreme base of head just in front of constricted neck region; anteocular portion of head three and one-half times as long as postocular portion, 70::19. *Antennæ* inserted near middle of anteocular area, the ratio of distance from eyes to apex of antenniferous tubercles :: distance from antenniferous tubercles to apex of head as 33::37; first antennal segment reaching three-fourths of the distance to apex of head; proportion of segments one to three as 28:92:75, the fourth segment missing. *Rostrum* two-thirds as wide at apex of first segment as thickness of front femora at middle; proportion of segments one to three as 45:71:21; long hairs confined to apical segments. *Pronotum* about four-fifths as long on median line as total head length including neck region, 105::130; nearly half again as broad across humeral angles as long, 152::105; disk with anterior spines much as in *dimidiata*; humeral angles rather strongly produced and a little elevated or reflexed, apices rounded. *Scutellum* as in *dimidiata* but with anterior discal elevations more prominent, rounded. *Hemelytra* scarcely reaching tip of abdomen, two-sevenths broader at level of apices of coria than across base of coria, leaving an expanse of connexivum exposed on either side about one-sixth the greatest width across hemelytra; hemelytral surface nearly naked, with only a few very small and inconspicuous subappressed hairs. *Connexivum* likewise nearly glabrous but with a scattering of short, black, appressed hairs along lateral margins. *Under surface* much as in *dimidiata* but with the thorax less highly polished and the abdomen with sparser and slightly shorter hairs and less strongly flattened venter.

Color yellow and black, the hemelytra with black on basal third of clavus, a very small spot at middle of corium, and narrowly on apex of corium. Membrane dark fuscous. Connexivum black across basal third of each segment above and beneath, these black areas posteriorly widened medially. Edges of ventral abdominal plates yellowish to the spiracles and beyond them in front and behind. Elsewhere black except for paler third antennal segment, joints of legs, tarsi, and apical rostral segment which are lighter.

Size, male, length 31 mm., width (pronotum) 7½ mm., (connexivum) 10½ mm.; female, length 33 mm., width (pronotum) 7½ mm., (connexivum) 12 mm.

Collected at Miraflores (Boyaca), altitude 1450 m. (type locality); Malaga (Santander) altitude 2250 m.; Soata (Boyaca) altitude 2050 m.; and Toledo (Santander) altitude 1650 m., all in Colombia, S. A., and sent to me by Dr. E. Brumpt who is rearing the species at the Laboratoire de Parasitologie de la Faculté de Médecine de Paris. The female holotype is deposited as No. 5117, in the California Academy of Sciences. The male allotype is in my own collection.

Phyllosoma Group

The group of Triatominæ included in the genus *Meccus* Stål (type *phyllosoma* Burm.) proves to be less isolated than originally supposed and hence has correctly been relegated to synonymy. In the future the still more restricted group of species, excluding the recently rediscovered *mexicanus* H. S. (Mazzotti, 1940c), may best be referred to as the "phyllosoma group." This typically Mexican group has remained in the utmost confusion until recently because of the difficulty in identifying Burmeister's species and because of the tendency to lump everything under the single name, *phyllosoma.* Thanks to the assiduous field work and careful laboratory breeding done by Dr. Mazzotti a more rational picture has gradually emerged. It now appears that my *Triatoma picturata,* recently confused by various persons with *longipennis*, *phyllosoma*, and *pallidipennis*, is an extremely variable species as regards color pattern, some specimens having an entirely black pronotum instead of the typical pale posterior lobe while the orange markings of the connexivum vary greatly in extent. Members of the phyllosoma group may be distinguished from the other large (over 24 mm. in length) North and Central American Triatomas by their longer first antennal segment which reaches or surpasses level of apex of tylus and by the distinct curved black hairs which are either appressed or erect on the corium and which may be short and scale-like and scarcely as long as the interspaces between hairs or may be long and erect, reaching ½ mm. in length. The various species may be separated upon a sound morphological basis as follows.

Key to the Species of the Phyllosoma Group

1. Upper surface clothed with relatively short hairs, those of the corium less than one-third mm. in length, curved and appressed and shorter or about as long as the interspaces between hairs.....2
–. Upper surface clothed with long, erect or suberect, slightly curved black hairs, those of the corium about one-half mm. long, much longer than the interspaces between hairs.....4
2. Abdominal venter and metasternum clothed with short, subappressed brown hairs; with long, black, backwardly directed hairs confined to the mesosternum. Venedio, Mazatlan..... .....*longipennis* Usinger
–. Abdominal venter and meso- and metasternum clothed with backwardly directed, slightly curved hairs, many of which are over one-half mm. in length.....3
3. Membranous apical half of clavus and most of corium white, the base of the corium tinged with orange and the base of clavus and narrow apex of corium black. Guerrero, Colima, Jalisco, Michoacan, Morelos, Mexico (Distrito Federal)..... .....*pallidipennis* (Stål)
–. Membranous apical half of clavus black. Corium black with very broad orange areas basally and subapically. Nayarit, Jalisco, Colima.....*picturata* Usinger
4. Hemelytra short, not exceeding fifth visible abdominal tergite. Orange connexival markings confined to posterior third or fourth of each segment and reaching lateral margins only at postero-lateral angles. Juchitan and Tehuantepec, Oaxaca .....*phyllosoma* (Burm.)
–. Hemelytra longer, reaching at least to middle of sixth abdominal tergite and sometimes exceeding tip of abdomen. Orange connexival markings occupying one-third to one-half of the posterior portion of each segment, including lateral margins. Pinotepa Nacional, Collantes, Tututepec and Alacranes, all in Oaxaca.....*mazzottii* n. sp.

Triatoma mazzottii Usinger, new species

A large orange and black species with strongly dilated connexivum, with much of the body covered by fine erect or backwardly directed black hairs which are much longer than interspaces between the hairs (½ mm. in some cases), and with the hemelytra nearly reaching or even surpassing the tip of abdomen.

Head nearly two and one-half times as long (excluding constricted neck region) as broad across eyes, 120::51; tylus tapering apically but only slightly enlarged near base, the head broadly, transversely depressed at the base of tylus; juga short, scarcely reaching level of apices of antenniferous tubercles; lora reaching

almost to tip of tylus; upper surface with a longitudinal row of transverse wrinkles and with moderately long, subappressed, curved, black hairs in front of eyes and much longer, suberect hairs posteriorly; the surface gradually elevated posteriorly and then depressed behind the eyes to ocelli; eyes only slightly longer than postocular length of head to posterior constriction, 24::22, and less than two-thirds as wide as interocular space, 14::22; ocellar yoke at posterior constriction of head but the ocelli extending well forward to the middle of postocular portion of head; anteocular portion of head three and one-half times as long as postocular portion, 75::21. *Antennæ* inserted exactly midway between the eyes and apex of head, the apices of antenniferous tubercles reaching just halfway from front margin of eyes to apex of head; first segment reaching beyond tip of tylus to extreme apex of head, second segment three times as long as first, 114::37, remaining segments broken off; first two antennal segments clothed with stiff black, moderately long, apically directed, subappressed hairs, without long erect hairs. *Rostrum* about two-thirds as wide at apex of first segment as front femur at middle, 11::18; proportion of segments one to three as 45:74:21. *Pronotum* (on median line) about one-seventh shorter than total length of head, 112::132; less than half again as broad across humeral angles as long, 162::112; constricted at middle to one-half the width across humeral angles, 82::162, then swollen on anterior lobe, the greatest width across lateral tubercles one-eighth greater than across constriction, 90::82; anterior collar strongly depressed and flattened, constricted behind to about one-half the greatest width of anterior lobe, 47::90, and then strongly anterolaterally produced as blunt spines, the total width across which is one-fourth greater than at the constriction of the collar; disk with very large, smooth wrinkles, with two stout, subacute spines in front of the middle of anterior lobe; sparsely clothed with exceedingly long, erect black hairs. *Scutellum* one-fourth longer than broad at base, 83::65; three-fourths as long as pronotum on median line, 83::112; apical spine scarcely elevated posteriorly and bluntly rounded at tip. *Hemelytra* long, reaching to apical third of last dorsal abdominal segment; only moderately widened posteriorly when at rest, one-fifth broader across widest point, a little before level of apices of coria, than at narrowest point just behind bases of coria, 170::143; clavus on basal half and corium throughout sparsely clothed with erect, slightly curved, black hairs which are well over one-half millimeter in length. *Connexivum* very broadly dilated, the abdomen appearing suboval in outline; broadly exposed, almost two-thirds broader than greatest width across folded hemelytra, 276::170; naked above and beneath except for very short, appressed, black hairs along lateral margins. *Under surface* highly polished and clothed with fine long backwardly directed hairs; mesosternum with a transverse, arcuate

elevation with its concave side directed posteriorly and sharply depressed; abdominal venter smoothly rounded or roundly flattened. *Legs* with shorter hairs than on most of the body, the femora with a pair of blunt spines subapically.

Color uniformly black with orange-yellow basally and subapically on the coria and on the basal half of each connexival segment extending slightly onto abdominal tergites and ventrites. Constricted neck region, apex of rostrum, tarsi, joints of legs, and probably last two antennal segments fulvous or paler.

Size, male, length 34 mm., width (pronotum) 8 mm. (connexivum) 14 mm.; female, length 35 mm., width (pronotum) 7½ mm. (connexivum) 14 mm.

Holotype, male, No. 5118, C. A. S., Ent., allotype, female, No. 5119, C. A. S., Ent., and three male paratypes, Tututepec, Oaxaca, Mexico, Luis Mazzotti collector. Other specimens from the type locality and Pinotepa Nacional, Collantes, and Alacranes, Oaxaca, are in the collection of Dr. Mazzotti, to whom this species is gratefully dedicated in appreciation of his outstanding work on the Triatominæ of Mexico.

One of the male paratypes is somewhat smaller (length 31 mm., width of pronotum 6¾ mm., of connexivum 12 mm.) with the membrane exceeding tip of abdomen by about one-fourth the length of last abdominal segment.

Mazzottii is closest to the true *phyllosoma* (Burm.) of which Burmeister (1835) said "Flugeldecken viel schmaler und kurzer der fast kreisrunde, zeimlichdicke Hinterleib." *Phyllosoma* differs in having a smaller pronotum, shorter hemelytra, and less extensive orange markings. Moreover, it is geographically isolated for Dr. Mazzotti writes, "I have collected it only in Juchitan, and Tehuantepec, Oax., localities of the Pacific coast of the Tehuantepec Isthmus. At the West of the Isthmus the coast advances into the ocean, and all that coast until the limits of the State of Guerrero is denominated 'Costa Chica de Oaxaca.' In that coast and very distant from the Isthmus, at Pinotepa Nacional, Oax., Collantes, Oax., Tututepec, Oax., Olacranes, Oax., etc., I have collected exclusively the long wing variety; I have never found this species at the Isthmus (Juchitan and Tehuantepec)." Since writing the above Dr. Mazzotti has received three more specimens of the true *phyllosoma,* this time from Totocapan "in the middle of the state to the South East from the city of Oaxaca." A map showing the distribution of these species is given by Mazzotti (1940a). His symbol indicating the *phyllos-*

oma with (*alas cortas*) is the true *phyllosoma*. It is possible that *mazzottii* may prove to be only a subspecies of *phyllosoma* but any further conclusions regarding its status must await breeding work in progress in the laboratory of Dr. Mazzotti.

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